

ocelli being normal. The name *Odontolarra* must therefore sink.

*Liris ducalis*, Sm.

*Larrada ducalis*, Sm. Journ. Proc. Linn. Soc., Zool. iv. p. 84, Suppl. (1860).

*Liris nigripennis*, Cam. Mem. Manch. Lit. & Phil. Soc. (4) ii. p. 131 (1889).

These seem to me to be identical. A specimen from Camerons collection taken at Poonā, and marked by him as the type *violaceipennis* (probably an error for *nigripennis*), is only a male of *ducalis*.

XXXI.—*Some Further Notes on Lamellicorn Beetles of the Subfamily Dynastinae*. By GILBERT J. ARROW.

(Published by permission of the Trustees of the British Museum.)

[Plate XIII.]

M. SEMENOV (Rev. Russe Ent. xii. 1912, p. 499) has objected to my treatment of his generic name *Crator* as a synonym of *Podalgus*, Burmeister, on the ground that the first species attributed to the latter by Burmeister is its proper type, and that Lacordaire was wrong in restricting it to the second species. Happily, such a rule as this has never been accepted, or many well-established genera would fall. Burmeister himself began the process of dismembering his composite genus, but without re-defining it, and Lacordaire, in doing this, was entitled to take as its type any of the species left in it by its author, and naturally selected the African one indicated, although not named, as the type by Burmeister.

By an unfortunate coincidence, my paper upon the Madagascan genus *Lonchotus* was printed without the knowledge that Herr Sternberg had, a short time previously, published descriptions of several species of the genus. Herr H. Prell has kindly sent me Sternberg's types for comparison with mine, and I have found that *L. rugosicollis*, Stornb., is *L. borealis*, Arrow, while *L. splendens*, Stornb., is the species I regard as *L. lentus*, Burm. The name *curticollis*, Stornb., must be dropped, being based upon a deformed specimen (apparently a female of *L. lentus*), whose thorax shows exactly the same abnormal condition as the specimen of *Bothynus simplicitarsus*, Burm., described as *B. monstrosus*

by Bates. I have seen similar individuals of various other species.

The *Geotrupes dentatus* simultaneously described in 1801 by Fabricius and Weber has since remained unrecognized, although placed by Burmeister (and by the Munich Catalogue, in consequence) in the genus *Oryctes* on account of its comparison by Weber to *O. nasicornis*. If the two original descriptions are compared with a female specimen of *Xylotrupes gideon*, L., I do not think it will be doubted that that is the insect referred to.

*Oryctes faunus*, Billb., although supposed to inhabit "Barbary," is evidently a female *Strategus*, probably *S. validus*, F.

In his 'Catalogue of the Lamellicorn Coleoptera of Argentina' (part iv., 1911) Mr. Carlos Bruch has included the name of *Thronistes rouxi*, Burm., a very rare and peculiar insect found in Chili (according to Reiche); but from a specimen he has kindly sent to me I have been able to ascertain that the Argentine beetle is not *Thronistes*, but a small female *Golofa*, apparently that of *G. cochlearis*, Ohaus. In describing the front tibiæ of this species Dr. Ohaus seems to have reversed the sexes, for a male co-type presented to the British Museum by Mr. Bruch has only three distinct teeth.

The name *Ceratocrates*, introduced by Dr. Ohaus for a new genus, is preoccupied. I have therefore substituted *Gnathogolofa* (nom. nov.).

*Palmerstoniu minor*, Blackb., is the female of *Horonotus optatus*, Sharp (*Dipelicus*). *P. bovilli*, Blackb., is also a female of a species related to *D. montrouzieri*, Reiche, and *nosutus*, Bates.

*Pseudopimelopus lindi*, Blackb., appears to me to be *P. nothus*, Burm.

*Phileurus senegalensis*, Cast. (*cariosus*, Burm.), is a species of *Pseudosyrichthus* closely related to *P. clathratus*, Gerst.

*Trionychus strigipennis*, Fairm., appears to have been described from a small specimen of *Hovophileurus sulcipennis*, Arrow, which specific name is therefore superseded.

*Heteronychus nigrifrons*, Fairm., is evidently *H. arator*, F. *Semanopterus dentatus*, Blackb., the type of which is now in the British Museum, is a species of *Eophileurus*.

The members of the latter genus, although remarkably alike in external appearance, are rather numerous. The examination of the aedeagi of the males reveals a striking diversity of forms, and renders inevitable the separation of what, apart from this criterion, I should consider to have at

most the value of local races. In describing the following new species I have therefore sketched these organs, which provide the most essential means for their determination. The genus has the closest relationship with the South-African *Rhizoplatodes*, of which only a single species, *R. castaneipennis*, Boh., is known. The mentum of that species has a slightly different shape, the male has a curious pit at the back of the head which is not found in *Eophileurus*, and its pygidium is not bent under the body as in the Oriental genus.

*Eophileurus celebensis*, sp. n. (Pl. XIII. fig. 1.)

Niger, nitidus, glaber, capite rugoso, prothorace postice cum scutello parce et minute, antice rugose, punctato; elytris fortiter sed haud crebre seriato-punctatis, interstitiis haud perspicue punctulatis, marginibus externis postice laevibus, parum punctatis; pygidio apice laevi, medio vix punctato, basi et lateribus fortiter punctatis; metasterni medio fere laevi, lateribus rugoso punctatis:

♂, fronte breviter cornuto, vertice transverse impresso, impressione laevi; prothoracis margine antico medio minuto tuberculato, dimidio antico impresso, postice utrinque leviter elevato, dimidio postico medio longitudinaliter sulcato.

Long. 23 mm.; lat. max. 11.5 mm.

*Hab.* CELEBES.

There is a single male specimen in the British Museum, and I have seen two others in M. René Oberthür's collection. The species has the closest resemblance to *E. planatus*, Wied., but differs in the less close puncturation of the elytra, their smooth shining outer margins, the absence of minute punctures in the interstices, and, in the male, by the rugose head and slight marginal tubercle of the prothorax. The aedeagus of the male, represented in fig. 1, is entirely different from that of *E. planatus*, which, as shown by fig. 5, is asymmetrical.

*Eophileurus javanus*, sp. n. (Pl. XIII. fig. 2.)

Niger, nitidus, glaber, capite rugoso, pronoto antice fortiter et rugose, postice sat minute, punctato; scutello fere laevi; elytris striato-punctatis, interstitiis parce minutissime punctulatis, lateribus postice crebre sat minute punctatis; pygidii medio fortiter punctato, apice laevi, basi et lateribus rugosis; metasterni medio minute, lateribus rugose, punctatis:

♂, fronte breviter cornuto, vertice transverse impresso, impressione laevi; prothorace antice impresso, margine antico medio minute tuberculato.

Long. 21-24 mm.; lat. max. 10.5-11 mm.

*Hab.* JAVA: Buitenzorg (*J. Z. Kannegieter*, Feb. 1890), Sengoro (*A. Koller*, 1899).

This greatly resembles *E. celebensis*, with which it agrees in the rugose head and the slight tubercle at the front margin of the pronotum. It differs in the more closely punctured elytra, finely punctured interstices, and closely and roughly sculptured posterior lateral margins. These two species, as well as those I have previously described, may be distinguished at once by the examination of the ædeagus of the male. That of *E. javanus* is shown in fig. 2.

There are two males of *E. javanus* in the British Museum, and several females from Borneo and Singapore probably belong to the same species, but until the two sexes occur together this must remain a little uncertain.

*Eophileurus quadrigeminatus*, sp. n. (Pl. XIII. fig. 3.)

Niger, nitidus, elytris haud grosse sat crebre punctatis, singulo seriebus punctorum 4 duplicibus lineaque suturali ornato, intervallis sat latis, irregulariter punctatis, marginibus posticis subopacis, subtiliter punctatis; pygidio politissimo; metasterno densissime punctato et rufo-hirto:

♂, pronoto medio late excavato, cavitate postice lato, multo post medium producto, ab hac ad basin profunde sulcato.

Long. 24 mm.; lat. max. 12 mm.

*Hab.* TONKIN: Chapa, Lao Kay, 3600 feet.

A single male specimen was found by M. R. Vitalis de Salvaza, and presented by him to the British Museum. It is exceedingly similar to *E. chinensis*, Fald., but may be distinguished by the finer and less uniform puncturation of the elytra, upon which there are four double rows of punctures, with wide and irregularly punctured intervals. These are traceable, but much less distinct, in *E. planatus*, Wied., from which the new species can be also distinguished by its very densely punctured and thickly hairy metasternum and the cavity of the thorax of the male extending considerably past its middle.

*Eophileurus pectoralis*, sp. n. (Pl. XIII. fig. 4.)

Niger, nitidus, elytris grosse et confluent lineato-punctatis, lateribus similiter, haud irregulariter, punctatis, marginibus posticis solum confuse punctatis; pygidio parce et minute punctato; metasterno toto rufo-hirsuto, lateribus densissime rugosis et vestitis:

♂, pronoti medio late excavato, cavitate fere circulari, multo post medium producto.

Long. 24 mm.; lat. max. 12 mm.

*Hab.* ASSAM: Manipur (*W. Doherty*).

The unique male type-specimen is closely similar to *E. chinensis*, Fald., but differs in the strong and regularly serial puncturation of the elytra, which does not change its character at the lateral margins. The finely and densely rugose sides of the metasternum and their thick clothing of red hair are also characteristic of the species. Fig. 4 shows the ædeagus of this species.

*Eophileurus andamanicus*, sp. n. (Pl. XIII. fig. 6.)

*E. planato* affinis, sed minor, magis elongatus, elytrorum punctis majoribus et crebrioribus; metasterno parce punctato, vix hirsuto:

♂, pronoto antice leviter impresso, cavitate usque ad medium haud producta.

Long. 19–21 mm.; lat. max. 9.5–11 mm.

*Hab.* ANDAMAN IS. (*Capt. Wimberley*), NICOBAR IS. (*Roepstorff*).

The form and sculpture are almost identical with those of *E. planatus*, Wiede., but it is a smaller and rather narrower insect, with less hairy metasternum and slightly coarser and closer puncturation upon the elytra. Feeble as are the apparent differences between the two forms the ædeagus of the male (shown in fig. 6) is strikingly different.

*Eophileurus siamensis*, sp. n. (Pl. XIII. fig. 7.)

Niger, nitidus, sat latus, elytris grosse et crebre punctatis: *E. planato* proxime affinis, sed minor, elytrorum punctis majoribus et crebrioribus, marginibus externis antice magis reflexis; metasterni lateribus parce punctatis, distincte rufo-hirsutis.

Long. 20 mm.; lat. max. 10 mm.

*Hab.* SIAM: Bangkok, Chantabon (*S. S. Flower*).

*E. siamensis* has the small size and feebly developed male characteristics on head and thorax, and also the coarse and close elytral puncturation, of *E. andamanicus*, but it is less elongate and the metasternum is more hairy, in which it more nearly resembles *E. planatus*. The ædeagus is shown at fig. 7.

The ædeagi of a few other species of *Eophileurus*, in addition to the six new forms here described, will be found represented upon Plate XIII., which, owing to a misadventure, has had to be deferred to a later part.

*Cyphonistes sublevis*, sp. n.

Castaneo-rufus, capite marginibusque omnibus anguste infuscatis :

*C. vallato* similis, sed clypeo paulo breviori, canthis antice acutis, elytris sublævibus, punctis paucis et subtilibus, pygidio basi flavo-hirto.

Long. 24-27 mm. ; lat. max. 14-15.5 mm.

*Hab.* BRIT. E. AFRICA: Nandi Plateau, 5700-6200 feet (S. A. Neave, June 1911).

Amongst the exceedingly similar species of this very difficult genus *C. sublevis* is nearest to *C. arrowi*, Prell, but it is broader and more lightly punctured, the antecular lobes are more sharply pointed in front, and the pygidium is fringed with tawny hair at the base, from the angles to near the middle. The paramera of the ædeagus of the male are barbed near the middle of the outer edge, but quite destitute of the spiny processes from the inner edge found in the allied species. The last ventral segment of the female has a double emargination, as in *C. vallatus* and *arrowi*, but the median tongue, instead of being slender and sharp as in those species, is short and very blunt.

Professor Kolbe has assigned *Heteronychus latiusculus*, Fairm., to his genus *Heteroligus*, but the description mentions various features inconsistent with that view. The immarginate pronotum and thickened outer edges of the elytra suggest a female of *Cyphonistes* or allied genus.

## IDIOSCHEMA, gen. nov.

Corpus elongatum, depressum. Caput parvum, late triangulatum, utrinque ante oculos extus productum, acutum, clypei apice recurvo, acuto, fronte tuberculis duobus parvis transversim positus, sat remotis, instructa. Prothorax antice minute tuberculatus. Antennæ minutæ, stipitis atque clavæ articulis brevissimis. Mandibulæ late detectæ, concavæ, margine externo integro, rotundato. Pedes validi, tarsis omnibus brevibus unguibusque minutis. Tibia antica crassa, fortiter sed obtuse tridentata, dente supero remoto, post medium posito. Tibiæ quatuor posteriores extus fortiter spinosæ, posticæ extremitate sat latæ, recte truncatæ, calcaribus validis, latis, longiori apice flexo. Propygidium medio late sat regulariter transversim striolatum.

♂. Tarsus anticus contractus, articulo ultimo globoso, ungue majori lato, valde inflexo, minori fere obsoleto. Propygidium medio late sat regulariter transversim striolatum. Pygidium fortiter recurvatum.

*Idioschema karruensis*, sp. n.

Obscure rufa, supra nitida, subtus sat dense fulvo-villosa, capite grosse rugoso; pronoto fortiter punctato, lateraliter paulo densius, marginibus fortiter arcuatis, antice approximatis, angulis anticis acutis, posticis rotundatis; scutello paulo punctato; elytris grosse ocellato-punctatis, linea suturali fortiter impressa lineisque punctorum 4 discoidalibus; pygidio minute coriaceo ot setoso, apice grossius rugoso, nitido.

Long. 16 mm.; lat. max. 8 mm.

*Hab.* CAPE COLONY: Karroo (Oct. 1913).

A single male specimen was found at Mortimer by Mr. W. R. White-Cooper.

This interesting insect is nearly allied to the genus *Pycnoschema*, but differs in many rather important features. The clypeus is triangular, and not produced into a narrow rostrum as in *Pycnoschema*, and the horn of the male is absent and replaced only by two slight tubercles. The form of the front tibia is also quite different. The antennæ are very short and the club not elongate in the male. The mandibles have the rounded outer edge of those of *Pycnoschema*, and there is the same angular process in front of the eye. The outer claw of the front foot is reduced (no doubt in the male alone) to a minute vestige. The propygidium is furnished with moderately fine and close stridulatory ridges.

*Aphonoproctus vagabundus*, sp. n.

Niger, parum nitidus, breviter ovalis, convexus, corpore subtus haud dense rufo-hirsuto; capite punctato-rugoso, antice angustato, truncato, fronte bituberculata, tuberculis vix connexis; pronoto ubique crebre et fortiter punctato, linea angusta lævi mediana, lateribus regulariter arcuatis, angulis posticis obsoletis; scutello lato, punctato; elytris fortiter punctatis, singulo linea suturali incisa punctorumque seriebus quatuor geminatis prædito; pygidio subtiliter rugoso; tibiis anticis acute 4-dentatis:

♂, tuberculis frontalibus longioribus, pygidii apice incurvo.

Long. 18.5-21.5 mm.; lat. max. 10.5-12.5 mm.

*Hab.* UGANDA: Msozi, 4300 feet (*Col. Delmé Radcliffe*), Entebbe (*C. C. Gowdey*). NYASALAND: Mlanje (*S. A. Neave*).

According to the description of the typical species, *A. pentodontinus*, Kolbe, this is a larger insect, more coarsely punctured and less shining. The tubercles upon the head are not united by a carina and there are none behind the front margin of the pronotum, although traces of these appear in two

specimens in our collection which do not differ in other respects.

Five species of Dynastinæ from Woodlark Island were described by Montrouzier under the name of *Scarabæus* (Ann. Soc. Agric. Lyon, (2) vii. 1855, p. 20), and four of them were omitted from Gemminger and Harold's Catalogue, no doubt owing to the compiler's inability to locate them. Two of them (*S. woodlarkianus* and *excavatus*) seem to me to belong to my genus *Papuana*, and the first I believe to be the insect I called *Papuana semistriata*. Herr Prell is probably correct in regarding *P. lævipennis*, Arrow, as a variety of the same species.

Of the other species of Montrouzier, *Scarabæus macleayi* is undoubtedly *Xylotrupes gideon*, L., *S. triangularis* is a *Dipelicus*, and *S. dubius* is doubtful. The description suggests a female *Trichogomphus* (although said to be taken from a male), but the four-toothed front tibiæ, coupled with the size, agree with no known genus except *Oryctes*.

Herr Prell has treated as a subspecies of *Papuana lansbergei*, Schauf., an insect from Java which seems to me to be a perfectly distinct species. Examples of both forms from the same sources (Fruhstorfer's captures) as those before Prell are in the British Museum. The Javan *P. badia*, in addition to its different colour, is smaller and much less elongate than *P. lansbergei*, the pygidium is less closely punctured, and, in the male, the slight depression at the front of the pronotum is limited behind by a definite ridge of which there is no trace in the other species.

These two forms with simplified armature are the only known Malayan species, all the others inhabiting islands farther to the east. The following is another new species from New Guinea:—

*Papuana angusta*, sp. n.

Nigra, nitida, elongata, supra lævissima, parum convexa, clypei lateribus fere rectis, convergentibus, apice profunde emarginato, utrinque acute dentato; pronoto cum scutello lævissimo, illius lateribus regulariter arcuatis, anguste marginatis, angulis anticis acutis, posticis rotundatis, elytris punctato-sulcatis, punctis ocellatis, apicibus irregulariter haud fortiter punctatis; pygidio dense subtiliter punctato, medio et apice lævigato; tibiis anticis tridentatis, dente supero sat remoto:

♂, capite breviter cornuto, cornu postice planato, apice minute



bituberculato; pronoto antice utrinque paulo excavato et supra processu horizontali brevi, antice truncato, munito:

♀, capite bituberculato, pronoto antice transverse carinato.  
Long. 22·5–28 mm.; lat. max. 11·5–14 mm.

*Hab.* DUTCH NEW GUINEA: Utakwa R. (*A. F. R. Wolleston*); Mt. Goliath (5000–7000 feet—*A. S. Meek*).

Like *P. trinodosa* and *uninodis*, Prell, this is a narrow-bodied species, but it is considerably larger than either and quite different in its armature. The head is very smooth and the clypeus sharply bidentate in front, but the teeth do not diverge, the sides of the clypeus are almost straight and uniformly convergent, and its front margin strongly excised. Upon the clypeal suture, which is strongly bent forwards, the female bears two sharp conical tubercles placed close together, and the male a short horn, broad at the base, flattened or slightly excavated behind and slightly bifid at the end. The pronotum, like the head, is almost impunctate, its sides are strongly rounded and finely margined, the front angles acutely produced, and the hind angles rounded off. In the male there is a horizontal process anteriorly, truncated in front, nearly vertical in the middle, and not reaching beyond the front margin. Just within the latter there is a slight rugose excavation on each side.

In the female the thoracic process is represented by a transverse carina a little behind the front margin, the intervening space being finely punctured. The scutellum is smooth and the elytra are broadly sulcate, with ocellated punctures in the sulci. The latter do not reach the end of the elytra, the posterior outer margins of which are finely punctured. The pygidium is finely and densely punctured except at the middle and apex. The front tibiæ bear three strong teeth, the uppermost one rather remote from the other two, which are close together.

#### ONYCHIONYX, gen. nov.

Corpus elongatum, parallelum, nudum, pedibus absque spinis, sed tibiis omnibus extus dentibus tribus fortibus calcaribusque validis, acutis, armatis, tibiarum anticarum dentibus obliquis, collocaatis, tarsis moniliformibus, articulis basalibus haud spinosis, unguibus valde curvatis, haud divergentibus, onychio longo, curvato, haud setoso. Clypeus transversus, margine antico medio bidentato, tuberculisque duobus in carina frontali. Mentum convexum, antice angustatum, truncatum, palpis crassis. Maxillæ acute 6-dentatæ, dentibus 3 inferis connatis. Mandibulæ intus et extus dense setosæ, apice subito intus inquinato. Prosternum antice et postice productum.

♂ et ♀ vix dissimiles.

*Onychionyx opacipennis*, sp. n.

Piceus, subcylindricus, nitidus, elytris opacis, humeris exceptis; clypeo sat crebre punctato, fronte minus crebre; pronoto convexo, minute et parce inæqualiter punctato, lateribus paulo fortius, angulis obtusis, lateribus medio contractis; scutello elytrisque irregulariter annulato-punctatis; pygidio nitido, modice crebre punctato:

♂, pygidio subtus reflexo.

Long. 29-33 mm.; lat. max. 15-17 mm.

*Hab.* DUTCH NEW GUINEA: Mt. Goliath, 5000-7000 feet (*A. S. Meek*).

This is another of the curiously isolated but yet inter-related forms of *Dynastinae* which characterize the Papuan Region, and of whose probably peculiar habits we as yet know nothing. It is remarkable in the absence of hair, and especially of the bristly hairs upon the legs which form a rather constant feature of the subfamily. The two sexes are almost identical, there are no elevations or depressions upon the head or thorax, and the front feet are neither elongated nor thickened in the male. The front tibia bears three sharp external teeth placed close together, and each of the four posterior tibiæ also bears three sharp spines externally, the last at the extremity. The tarsi are simple and similar on all the legs, and neither spinose nor bristly, and the claws are strongly curved and not at all divergent, so that the two tips are close together. The onychium is strongly developed, not setose at the end, and has a corresponding curvature to that of the claws, so that the extremities of all three are almost in contact, an arrangement which I have seen in no other beetle.

It is more nearly related to *Hatamus* than to any other known genus, but differs greatly in its massive build, the absence of hair from the legs and lower surface, the abnormal claw-structure, the form of the tibiæ and tarsi, the similarity of the sexes, and other important points.

The Australian *Dynastinae* are very imperfectly known at present. Many species described by Boisduval, Guérin, Macleay and others, are still unrecognizable, and Blackburn has trusted to very speculative determinations of them in describing the numerous species for which he is responsible, and of which some are based upon female specimens or males of poor development. The fixation of many of the earlier-described forms is likely to remain long a matter of uncertainty, but, Blackburn's types having now become part of

the British Museum Collection, I am able to give here a few notes upon the correct nomenclature of the species.

Blackburn himself called attention (Trans. Roy. Soc. S. Austr. xix. 1895, p. 41) to the great variability of the species of the genus *Semanopterus*; but he proceeded to describe a considerable number of new forms from minute differences, as though the range of variation had been exceptionally small. After a very careful comparison of his types in conjunction with all other available specimens, and in particular a study of the genitalia of the males, I have been driven to the conclusion that the genus consists of only a few species of great variability. The excision of the hind angles of the prothorax, upon which Blackburn relied for the primary subdivision of the genus, is found in every degree of development; the puncturation, the sculpture and pubescence of the pygidium, and even the shape of the prosternal process, are highly inconstant. I have already expressed my opinion that the three names bestowed by Hope (*adelaidæ*, *subæqualis*, and *depressus*) refer all to one species. To this species *depressiusculus*, MacL., and *meridianus*, Blackb., also apply, and it should be called *S. subcostatus*, Cast. *Semanopterus leai*, Blackb., and *S. tricostatus*, Blackb., are two species apparently confined to West Australia; while all the other names introduced by Blackburn (except *dentatus*, which I have already referred to *Eophileurus*) belong, in my opinion, to a single variable insect, which ranges right across the continent from Perth to N. Queensland. It was first described by Macleay as *S. convexiusculus*. The only other known species is *S. solidus*, Burm.

The species of *Dasygnathus* have also been tabulated by Blackburn by the use of characters which seem to me to have little or no importance. An accidental separation of the elytra in some specimens apparently misled him into describing these as dilated behind the middle. Thus, he has admitted that this and the shape of the horn of the male are all he could find to distinguish *D. trituberculatus* and *recticornis*. With regard to the first point, the only difference perceptible to me between the type-specimens is that in *D. trituberculatus* the elytra are slightly parted, while, as to the second, variation in the most variable of all features must be assumed to be merely individual until it is proved common to a group. In my opinion, *D. trituberculatus*, *recticornis*, and *majr* are indistinguishable. Blackburn has overlooked the fact that the median thoracic tubercle mentioned by him as the chief differential character of the first is similarly present in the other two. It is also found in the

form with anterior lateral tubercles called *mastersi* by Macleay, which may be an extreme development of the same species.

The three following species, like *D. inermis*, Blackb., are hornless in the male. It is probable that there are many related forms, which, if known, have been supposed to be females only.

*Dasygnathus globosus*, sp. n.

Castaneus, capite prothoraceque obscurioribus, breviter ovatus, convexus, capite parvo, pronoto nitido, parcissime minute punctato, ad latera angusto ruguloso, his omnino rotundatis, angulis posticis fere obsolete; elytris irregulariter seriato-punctatis:

♂, capite ubique grosse punctato, clypeo brevi, reflexo, antice recte truncato, lateribus rectis, multo convergentibus, postice angulatim carinato et ad angulum minute sed acute tuberculato; prothoracis antice medio breviter impresso, basi haud marginato; pygidio convexo, omnino crebre ruguloso.

Long. 25 mm.; lat. max. 15 mm.

*Hab.* QUEENSLAND: Moreton Bay.

This has a short rounded shape, quite different from that of all the other species, and in the great reduction of the external male characters is comparable only with *D. inermis*, Blackb. From that it differs entirely, not only by its globose form, but in the shape of the head, of which the clypeus is very short and the front angles very obtuse, but not at all rounded. The marginal line at the front of the pronotum is not angulated in the middle.

In a second specimen (from Andrew Murray's collection, but without precise locality), which I believe to be the female of *D. globosus*, the head is larger, the clypeus almost semicircular and without carina or elevation of any kind, the pronotum has an almost continuous posterior marginal stria, but no anterior depression, and the pygidium is rather flat, shining, and very thinly punctured.

*Dasygnathus impotens*, sp. n. (Pl. XIII. fig. 11.)

Castaneus, capite pronotoque fere nigris; nitidus, convexus, elongatus, postice ampliatus; capite rugose punctato, clypeo mediocri, lateribus convergentibus, margine antico reflexo, leviter arcuato; pronoto parcissime minute punctato, ad latera anguste ruguloso, his fortiter arcuatis, angulis anticis acutis, posticis obtusissimis, basi trisinuato, immarginato; elytris dorso fortiter sulcatis, sulcis vage punctatis, spatio sublaterali inæqualiter punctato; pygidio parce punctulato, angulis anticis rugulosis, basi parce fulvo-hirsuto:

♂, capite haud carinato, fronte tuberculo minuto retrorsum inclinato medio instructo; pronoto antice leviter transversim impresso, linea submarginali, medio vix angulata, inciso.  
Long. 19 mm.; lat. max. 10.5 mm.

*Hab.* N. AUSTRALIA: Carpentaria.

A male specimen in the Museum was obtained by the late Alexander Fry.

The species resembles *D. inermis*, Blackb., but is smaller; the clypeus is rounded in front, and has a minute backward-pointing tubercle, but no carina; the incised line behind the front margin of the pronotum has no diverticulum in the middle, and the base is not margined. The maxillæ are armed only with minute and feeble tubercles instead of the strong teeth found in the typical species of the genus.

*Dasygnathus hospes*, sp. n. (Plate XIII. fig. 12.)

Castaneus, nitidus, subtus fulvo-hirsutus; modice elongatus, convexus, elytris subglobosis, post medium ampliatis; capite transversim rugoso, clypeo medioeri, antice reflexo, leviter arcuato; pronoto parce sat minute punctato, ad latera anguste ruguloso, his fortiter arcuatis, angulis anticis sat acutis, posticis fere obsolete, basi immarginato; elytris fortiter sulcatis, sulcis vage punctatis, spatio sublaterali irregulariter punctato; pygidio crebre punctato:

♂, capito vix carinato, fronte tuberculo minuto reclinato medio instructa; pronoto antice vix impresso, linea submarginali, medio breviter acute angulata, inciso.

Long. 17 mm.; lat. max. 10 mm.

*Hab.* QUEENSLAND.

A single male was taken during the 'Challenger' Expedition.

It is like *D. impotens*, but less elongate, more convex, with the elytra shorter, narrowed at the shoulders, and broader and more rounded behind. The clypeus is a little wider, the pronotum more convex, less produced in front, and the front marginal stria is sharply angulated in the middle.

Blackburn, in reviewing the species of *Isodon*, admitted himself unable to identify *I.* ("*Heteronychus*") *lucidus* and *I. picipennis*, of Macleay, but the latter's descriptions exactly fit the female and male respectively of *I. pecuarius*, Reiche, the most widespread member of the genus. The head and pronotum are not uncommonly almost black in the male of that species, and in the female a minute tubercle may or may not be visible upon the pronotum. Mistaking the real sexual differences for generic, Macleay looked for both sexes amongst

his females, and not unnaturally supposed the presence or absence of this tubercle to denote the male and female of his "*Heteronychus lucidus*."

The two following West Australian species are quite distinct from any hitherto described:—

*Isodon glaber*, sp. n.

Piceus, capite et elytris, vel superficie dorsali tota, sæpe nigris, pectore et pedibus longe fulvo-pilosis; brevis et latus, parum convexus, glaber, vix punctatus; capite attenuato, apice anguste truncato, fortiter reflexo, carina suturali fere recta; pronoto fere duplo latiori quam longiori, lateribus fortiter arcuatis, angulis anticis fere rectis, posticis toto obsoletis, antice medio breviter impresso et tuberculato, basi utrinque impresso; scutello lato, obtuse angulato; elytris stria suturali profunda aliisque indistinctis, punctis nonnullis subapicalibus; pygidii medio nitido, lateribus dense punctulatis; utriusque sexus pedibus simplicibus:

♂, tarsi et unguibus simplicibus, pronoto medio fortius impresso; pygidio valde convexo:

♀, corpore minus parallelo, pronoto antice angustato; pygidio parum convexo.

Long. 9·5–12 mm.; lat. max. 5·5–7 mm.

*Hab.* W. AUSTRALIA: Perth, Cannington, Cottesloe Beach.

Specimens in the British Museum were taken long ago by Duboulay, and it has more recently been found by Mr. G. E. Bryant.

It is a small insect closely resembling *I. lævigatus*, Burm., but rather smaller and still smoother above. The head is almost or wholly smooth, the clypeus is strongly produced in front, with concave sides, the clypeal carina is straight and sharply elevated, and the elytral striæ have almost entirely disappeared, except the deeply impressed one on each side of the suture.

*Isodon subopacus*, sp. n.

Supra toto niger, parum nitidus, subtus piceus, pectore et pedibus dense fulvo-pilosis; brevis, latus, sat convexus; clypeo fere impunctato, attenuato, antice anguste truncato, reflexo, carina suturali recta, valde elevata, fronte leviter punctato; pronoto impunctato, antice medio minute tuberculato, longitudinaliter impresso, lateribus fortiter arcuatis, antice approximatis, angulis anticis acutis, posticis obsoletis, basi utrinque fortiter impresso, scutello lævi; elytris fortiter seriato-punctatis, stria suturali profunde incisa; pygidio nitido, basi crebre minute punctato; utriusque sexus pedibus simplicibus:

♂, pronoti sulco antice paulo dilatato, pygidio convexo.

Long. 11–13·5 mm.; lat. max. 6·5–7·5 mm.

*Hab.* W. AUSTRALIA : Perth, Israel Bay.

Specimens have existed in the British Museum for over seventy years, and others have recently been taken at Perth by Mr. G. E. Bryant. The peculiar lustreless upper surface, of the pronotum especially, distinguishes the species from all others known to me. It is of an intense coal-black colour, with a broad pronotum entirely devoid of punctures, and the elytra are rather evenly and uniformly punctured in rows. The shape of the thoracic cavity is also peculiar, being longitudinal, with an anterior dilatation in the male which gives it a triangular outline.

*Novapus rugicauda*, sp. n.

Rufo-piceus, pectore dense rufo-hirsuto : scutello punctato elytrisque fortiter punctato-lineatis, punctis annulatis, stria crenata suturali integra, striis discoidalibus postice abbreviatis, intervallo subsuturali lateribusque fortiter haud crebre irregulariter punctatis, interstitiis minute punctulatis ; pygidio crebre rugoso, haud ciliato :

♂, capite rugoso, clypeo angustato, recurvato, vertice cornuto, cornu sat gracili, apice minute bicuspidato ; pronoto quam elytra vix latiori, late et profunde excavato, lateribus subtiliter punctatis, fossa transverse haud crasse rugosa.

Long. 20 mm. ; lat. max. 11 mm.

*Hab.* S.W. AUSTRALIA : King George's Sound (*J. A. Brewer*).

A single male specimen has been in the British Museum since 1870.

The species of *Novapus* are remarkably alike in general appearance, especially the males, but the examination of the pygidium shows differences of sculpture and clothing, which seem to be sufficient for the separation of most of them. The present species is the only one known in which that part of the body is closely rugose, the others having it punctured or smooth, often with a close fringe of hair at the base. Although Blackburn has not mentioned the pygidium of *N. striatopunctulatus*, which appears to resemble the new species, his type is a much larger insect, and, as its prothorax is less excavated, the difference of size is evidently not due merely to variation.

*Pseudoryctes sulcatus*, sp. n.

Ferrugineo-rufus, latus, nitidus, subtus fulvo-hirsutus, elytris fortiter punctato-suleatis, punctis grossis et confluentibus ; pygidii circumferentia longissime ciliata, medio lævi ; pedibus anticis sat gracilibus, tibiis longissime tridentatis, posterioribus quatuor crassis, tibiis brevibus, postice latis :

♂, clypeo sublævi, fere verticali, margine toto elevato, antice

medio minute exciso, antennarum flabello quam stipite multo longiori; prothorace quam elytris multo laeviori, tricornuto, supra toto excavato, fossa rugosa, haud pilosa, medio longitudinaliter divisa, cornu antico antrorsum producto, apice dilatato, bifido, lateralibus verticalibus, acuminatis, singulo dente obtuso antico minuto; scutello rugoso; elytris ad medium fere parallelis, deinde angustatis; pygidio subtus inflexo:

♀, clypeo obliquo, parabolico, fortiter punctato, prothorace quam elytris angustiori, medio cum scutello haud fortiter punctato, elytris ab humeris ad post medium dilatatis; pygidio magno, porrecto.

♂. Long. 18 mm.; lat. 9.5 mm. ♀. Long. 16 mm.; lat. 10 mm.

*Hab.* S. AUSTRALIA: Hermansburg (near Lake Eyre).

Three males and a female of this striking species have been collected and presented to the British Museum by Mr. H. J. Hillier. It differs from all other known species by the deep coarsely-punctured grooves of the elytra. In its armature it seems to agree with *P. tectus*, Blackb., the very incomplete description of which omits all reference to the elytra, which must therefore be supposed to be like those of the species previously described. Blackburn's insect is also considerably larger and has the thoracic cavity filled with hair, which is quite absent in *P. sulcatus*. The mentum, the form of which is the only real distinguishing feature between *Pseudoryctes* and *Cavonus*, is swollen in two of the specimens of *P. sulcatus* in the manner characteristic of *Pseudoryctes*, and in the other two is collapsed and nearly flat. The former condition must, of course, be regarded as the normal one, but it is evident that this character is of less importance than has been supposed.

#### *Aneurystypus levis*, sp. n.

Rufo-ferrugineus, parvus, corpore subtus longe et dense flavo-piloso; supra nitidus, sat latus, clypeo postice carina recta delimitato, fortiter punctato, illius longitudine fere ad latitudinem æquali, margine antico valde arcuato et reflexo, fronto rugose punctata, vertice utrinque lævigato; pronoto parum convexo, haud excavato aut tuberculato, subtiliter punctato, lateribus leviter arcuatis, angulis anticis haud acutis, posticis valde obtusis; scutello fere lævi; elytris obsolete seriatim punctatis; pygidio nitido, parce minute punctato; pedibus gracilibus, tarsis parum longis.

Long. 11-12.5 mm.; lat. max. 7-7.5 mm.

*Hab.* QUEENSLAND.

As is usually the case in this group only the male is known.



It is similar in size and colour to *A. pauvillus*, Blackb., as well as in its general appearance, but there is no trace of thoracic depression or tubercle, while the very feeble puncturation of the pronotum, elytra, and pygidium also distinguish it immediately. The clypeus, on the other hand, is more strongly punctured and of different shape, being rather long, narrow, and strongly rounded in front. The pronotum is less convex, less deeply sinuated at the base, with the front angles less sharp and the hind angles distinctly indicated.

I have received specimens from Messrs. Staudinger and Bang-Haas.

*Ligyris amazonicus*, sp. n.

Nigro-piceus, vel supra toto niger, nitidus, elongato-ovalis, capite transverse rugoso, clypeo antice acutissimo bidentato, postice bituberculato; pronoto fortiter sat crebre punctato, antice ad marginem minute tuberculato et impresso; scutello subtiliter punctulato; elytris undique fortiter et crebre punctatis, punctorum lineis nonnullis geminatis; pygidio haud fortiter punctato, angulis anticis rugulosis; utriusque sexus pedibus omnibus simplicibus.

Long. 23-26 mm.; lat. max. 12.5-14 mm.

*Hab.* AMAZONS: Manaos, Obydos (*E. E. Austen*), Ega (*H. W. Bates*), Serpa, Teffe.

*Ligyris ebenus*, *maximus*, and *amazonicus* have been found all together in various localities in the Amazons region. They are closely related and exceedingly similar in shape and sculpture. In the last two the front tarsus of the male is not thickened, the clypeus is much more sharply bidentate and the pronotum more strongly punctured than in *L. ebenus*, Deg. From *L. maximus*, Arrow, the new species is easily distinguished by its smaller size and the very feeble depression at the front edge of the pronotum.

*Ligyris latus*, sp. n.

Nigro-piceus, vel supra toto niger, nitidus, robustus, late ovalis, capite transverse rugoso, clypeo antice acute bidentato, postice bituberculato; pronoto fortiter sat crebre punctato, margine antico medio minute tuberculato et longitudinaliter impresso, lateribus regulariter arcuatis, angulis posticis toto obsoletis, basi medio fere exciso; scutello perpaulo punctulato; elytris undique fortiter et crebre punctatis, punctorum lineis nonnullis geminatis; pygidii basi subtiliter rugoso, apice parce punctulato; utriusque sexus pedibus omnibus simplicibus.

Long. 27-31 mm.; lat. max. 15-17 mm.

*Hab.* VENEZUELA : Caraccas. COLOMBIA.

This species has a very close resemblance to the last, but is relatively broader than that or any other of the species nearly related to it. It is larger than *L. amazonicus*, and differs from it also in the complete obliteration of the hind angles of the prothorax, the curve of the lateral margin being uniformly continued. The sculpture of the pygidium is also different, about a third of its length from the base being finely rugose. These two species differ from *L. maimon*, Er., in their more punctured elytra, and from *L. ebenus*, Deg., and *gyas*, Er., in having the pronotum much more closely punctured.

*Cyclocephala longiceps*, Kirsch, seems to me to be *Anconatha humeralis*, Burm., Kirsch having possibly mistaken for the latter the species I have named *A. vulgaris*.

Kirsch's description of *Cyclocephala atacazo* suggests a species of *Anconatha* or *Barotheus*.

*Cyclocephala pugnav*, sp. n.

Nigro-fusca, elytris fulvis, sutura signaturisque duabus valde angulatis nigris; elongato-ovalis, nitida, clypeo antice arcuato; pronoto cum scutello minute punctato; elytris fortiter punctatis, punctorum seriebus duplicibus tribus discoidalibus :

♂, clypeo paulo producto, subtiliter punctato; pedibus anticis crassis, tibiis acute tridentatis, tarsis brevissimis, articulo ultimo magno, intus late lobato, articulo penultimo etiam lobato et longe ciliato; pygidio opaco, minute ruguloso:

♀, clypeo semicirculari, sat grosse rugoso; pedibus simplicibus, tibiis anticis haud acute tridentatis, posticis brevibus, elytrorum marginibus externis postice angulatis et incrassatis; pygidio nitido, grosse punctato.

Long. 16-18 mm.; lat. max. 8.5-9.5 mm.

*Hab.* GUIANA; BRAZIL: Para, Ega, Teffe.

It is a dark-coloured species, of which the elytra only are pale, with dark markings, which are sometimes reduced to a sutural line and a few dark marks at the shoulders, but may spread into two transverse zigzags, which occasionally unite. A feature which I have seen in no other species is found in the peculiar modification of the front tarsus of the male. The three terminal joints are dilated and finely striated on their inner face, the penultimate one has a fringe of six or seven very strong bristles at its outer edge, and the last joint has a broad lateral process curving backwards to meet the tips of these bristles, the whole forming a rather elaborate grasping apparatus. The inner claw is very large,

strongly bent, and minutely toothed near the middle of its outer edge.

*Cyclocephala flavipennis*, sp. n.

Læte rufa, elytris flavis, vertice nigro; lævis, nitida, elongato-ovalis, capite parvo, clypeo sat longo, antice arcuato, subtiliter rugoso, fronte leviter punctato; prothorace cum scutello minute et parcissime punctato; elytris leviter punctatis, lineis nonnullis geminatis indistinctis:

♂, pedis antici ungue interno magno, valde flexo, basi lobato; pygidio convexo, nitido, vix punctato; mandibulis extus angulatis:

♀, elytrorum margine externo post medium perspicue angulato; pygidio parum convexo, minute et parce punctato.

Long. 16-18 mm.; lat. max. 9-10 mm.

*Hab.* ECUADOR: Balzapamba (*R. Huensch*).

This has a very close resemblance to *C. gravis*, Bates, *C. atricapilla*, Mann., and other species identical in shape and colouring, but the clypeus is longer, narrower, and gently rounded in front, instead of being emarginate, the pygidium is smoother, and the elytra of the female have a marked angulation behind the middle of the outer margin.

*Cyclocephala erotylina*, sp. n.

Rufo-testacea, elytris læte flavis, sutura, linea submarginali, maculisque quatuor nigris, duabus pone basin elongatis, una mediana magna lineolaque parva subapicali; corpus elongato-ovatum, nitidum, clypeo attenuato, dense punctato, apice suaviter recurvo, fronte, pronoto scutelloque subtiliter punctatis, pronoto antice angustato, angulis anticis acutis, posticis obsoletis; elytris irregulariter hand fortiter punctatis; pygidio corporeque subtus minute fulvo-setosis:

♂, pedum anticorum tarsis crassis, ungue interno dilatato, apice minute fisso, tibia dentibus duobus fere transversis armata, tarsis quatuor posterioribus longis:

♀, pedum anticorum tarsis simplicibus, tibia dentibus tribus obliquis armata, elytrorum marginibus externis paulo ante apicem obtuse angulatis.

Long. 14 mm.; lat. max. 7.5 mm.

*Hab.* MEXICO.

Received from Messrs. Staudinger and Bang-Haas, without more precise locality. I describe it only because it is so highly distinctive as to be unfailingly recognized when seen. It is exactly similar in coloration and general appearance to *C. liomorpha*, Arrow, but with the clypens produced and attenuated, the pronotum rather longer and more strongly

punctured and the elytra less smooth and shining. The elytral spots are entirely black, the two basal ones elongate, and the black sutural line is not produced round the outer margin as in *C. liomorpha*, but there is instead a narrow black line within the outer edge. In the female the elytral margin is not angulated near the middle, as in the allied species, but towards the extremity.

It is highly interesting to find two species living so far apart as the Amazons and Mexico with important structural differences, but almost identical pattern and general appearance. They are evidently mimetic forms, strongly suggesting various conspicuously marked species of Carabidæ, Erotylidæ, and Chrysomelidæ. Probably the resemblance is general rather than particular, for the closest similarity I have noticed to any individual species of another family is to *Morphoides 10-notatus*, Duponch., an Erotylid inhabiting South Brazil, a third region very distinct faunistically.

*Agaocephala inermicollis*, sp. n.

Cuprea, elytris testaceis, marginibus callisque humeralibus et apicalibus infuscatis; sat convexa, nitida, clypeo rugoso, fronte fere lævi; pronoto igneo-cupreo, inæqualiter punctato, punctis disci parvis, et minutis, lateribus subtiliter rugosis, marginibus valde arcuatis, angulis omnibus obtusis, posticis fere obsoletis; scutello parce punctato; elytris ab humeris apicem versus paulo ampliatis, fortiter, irregulariter sat crebre punctatis, callis humeralibus et apicalibus prominentibus, lævibus:

♂, capite bicornuto, cornubus antrorsum fere recte productis, apice acuminatis, leviter recurvatis; pronoto valde convexo, toto inermi; pygidio valde incurvato, subtiliter punctato, lateraliter minute rugoso; antennarum clava magna.

Long. (absque cornubus) 30–31 mm.; lat. max. 16·5–17·5 mm.

*Hab.* S. BRAZIL: Rio Grande.

Two males were contained in the collection of the late Alexander Fry, now forming part of the British Museum collection.

The species is allied to *A. duponti*, Cast., but differs from that and all other species in its smooth and shining surface, that of the pronotum especially. Like that species and *A. melolonthoides*, Thoms., the male has no trace of a thoracic process, and another interesting feature is the elongate club of the antenna in this sex. This is common to the three species with unarmed thorax, whilst all those in which a thoracic process is found have the club small and scarcely different from that of the female.